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liquor, and I found every worm which it could get at with the force-pump destroyed; but they are so well protected from any liquid, that but little was done in this way towards their destruction.[*]

Owing to the severe treatment above described, and the depredations of the caterpillars, no fruit was produced: my trees, however, looked quite green and healthy.

In August and September I found the moths very numerous, flying about my trees; I was certain that they must deposite their eggs at this season, because at no other do they exist. Certain also of their being deposited upon or in the fruit and wood buds, I thought, if a proper liquor could be procured, sufficiently pungent and deleterious to kill them, and not to injure the trees, I might yet have a crop of fruit. Cheered with the hope of having a reward, for seventeen years application, I set about this last operation with alacrity.

In the beginning of January last, 1810, I took five pounds of flowers of sulphur, three pounds of soft soap, one pound of potash, four pints of very strong tobacco-liquor, (the expense of all which is but trifling,) and made up the mixture to ten pints, with fresh water: I put the mixture on the fire in a pot, and, when as intimately mixed as possible, I applied it in a luke-warm state, with a small painter's brush, so as not to miss a single bud; and potful after potful was mixed up, till I had washed thirty-four full grown wall trees, apple, pear, and cherry. Several trees, which had been dressed with horse flesh as above, were left unbrushed, that they might be compared with those which had been washed.

This application has at last proved successful: and now, on the first of June, I must say, that no money that I ever laid out yielded me so much pleasure, nor gave me such a prospect of profit. My trees, which had for many years exhibited an appearance of barrenness, are now full of most healthy well spread flowers, the stamina with fine antheræ upon them, quite bold; not a single apple-tree on the whole wall so washed being barren, and the cherries and pears set quite thick.

I have had visits from a number of professional men this Spring, who have expressed their admiration of the trees so treated. It is proper to add, that those which were left unwashed are nearly as usual, full of caterpillars, which I fear will resist my utmost efforts to reduce them at this season. I have applied tobacco-liquor in its strongest state: it has had a good effect, but still the power that they have to resist every liquid remains as an insuperable bar to their entire destruction, unless it be applied with a brush.

I use twenty-five pounds of sulphur, and a corresponding quantity of the other ingredients for thirty-four trees. The soap and tobacco-liquor gave a tenacity to the mixture so as to hold the particles of sulphur apart, while the potash penetrates deep ito the buds and bark, and destroys the eggs which produce the worm, and consequently destroys the glutinous matter which prevents the leaves and flowers from expanding.

I attribute the present healthy appearance of my trees entirely to the above application. The cutting of the roots has thrown them into a profusion of flowers, while the wash has destroyed the destroyers of my fruit and tress. I am, therefore, fully satisfied of the excellence of this wash; and must say, that I never saw any thing applied to fruit trees nearly so effectual for destroying this kind of caterpillars.

Another good effect of the wash may be stated. Six of the apple trees mentioned have been for the last eleven years much injured by mildew; but at this time there is hardly an infected leaf to be seen

On the Culture of Onions, and particularly on the Advantages to be derived by transplanting them from Seed-bed into regular Rows, at a proper Distance from each other. By Mr. James Macdonald, Gardener to his Grace the Duke of Buccleuch and Queensberry, Dalkeith.

(From the Transactions of the Caledonian Horticultural Society.)

The onion, a well-known root, is in this country in common use among persons of almost every description ; and, on that account, every improvement upon the culture of it may be considered as a matter of some consequence. From this consideration, I think it may not be improper to communicate it to the Horticultural Society some observations on this subject. The method which I am to recommend is not merely speculative ; for I have employed it with manifest advantage during four successive years ; and have found, from experience, that it not only produces excellent onions, but effectually prevents any destruction of the root, either by worms or by rot.

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[*] The result of the experiments with the tobacco-liquor was communicated to Mr. Walter Nicol, in a letter dated the 29th November, 1809, which has been since published by him in his "Garden Directory, and Gardener's Calendar."

As the ground which I cultivate in the way of garden is a light thin soil, it is not so favourable for the production of onions as many other soils. This led me to make many different experiments; and I am happy to say, that I found the following method far exceed my most sanguine expectations.

In the end of February, 1808, I sowed my general crops of onions ; and in each break I left one bed unsown. I pointed over the empty beds, and then drew in each bed, which was four feet and a half in breadth, six small drills. I then thinned out my young onion plants, and having prepared puddle, consisting of one part of soot and three parts of earth, mixed with a sufficient quantity of water, I took the young plants and dipt the whole of the roots in this puddle. I then transplanted them into the drills, at the distance of four or five inches from each other. A moist day is preferable for this work ; and when that is the case the vegetation seems to be in no degree retarded by their being moved. Nothing farther is afterwards wanted but to keep the beds free from weeds, by hoeing with a small hoe between the rows as soon as weeds appear.

Proper hoeing seems to promote the growth of the onions ; and, by the end of August or September, those treated in this manner will far exceed those which are not transplanted both in quality and in size. I also found them entirely free both from worm and from rot, while those which were left in the seed-bed were a good deal infested in both these ways.

In the end of January 1809 I again sowed my onion crops, making a still greater reserve of ground by interlining the beds, sowing one, and leaving another unsown.

In April I pointed over the empty beds, and transplanted the onions in the same manner as formerly mentioned. This trial was attended with equal success. The crops of transplanted onions far exceeded the others both in quality and size.

In the beginning of March 1810, I again sowed my onion crops, leaving a still greater reserve of ground for transplanting, nearly a quarter of an acre. This trial was attended with equal success as the two former ones. In the transplanted onions there was not the least appearance of worm or rot ; and they swelled at least one-half larger than those which were not transplanted. Indeed, they were equal in size to the best Spanish onions ; heavier for their bulk, and firmer. They had also a more pungent taste than is in general observed in Spanish onions.

The seeds employed were those most commonly used about Edinburgh ; chiefly the Strasburgh and Reading onion. All the kinds employed succeeded equally well when transplanted.

After these repeated trials, I have no doubt that the cultivation of onions by transplanting is an important improvement, and will be beneficial to the community. It will, I am convinced, be attended with less expense, and more profit, than the ordinary mode of culture. The transplanting may be performed by boys or girls, who will do as much of this work as any man can do in the same time, and at much lower wages. This method has the advantage of being cleared of weeds by hoeing in place of hand-weeding, which is in every respect much more beneficial to the growth of the plants. Besides this, a few beds of thick-sown onions may furnish plants for as many acres. The ground to be planted may be under Winter or Spring crops, and it will be sufficient to clear it of these by the end of April or the beginning of May, when the transplanting is to take place. Those growing in the seed-beds will in the mean time afford the necessary supply either for the family or market.

The advantages of this mode of cultivating onions, like many other things in gardening, requires only practice and perseverance to afford conviction to every one. And I am happy to say, that many practical and amateur gardeners, who have seen the crops in Dalkeith Park, are fully convinced of these advantages ; and I take this opportunity to present to the Caledonian Horticultural Society a few of my onions, as a sample of the general size.

Note—The onions alluded to in the preceding paper, sent by Mr. Macdonald, were much admired by all the members who were present at the meeting.

The Committee for Prizes unanimously voted to Mr. Macdonald an extra medal for this communication; and it was thought advisable that it should be printed in the first number of the Memoirs, that every gardener may have it in his power to try the mode of cultivation which he has recommended during the ensuing season. It will give much satisfaction to the Society if those who make trials will communicate the result to Mr. Neill, Secretary.

Method practised in Germany of bleaching Virgin Wax.

(From the Annales des Arts et Manufactures.)

In Germany they bleach virgin wax rather by simple exposure to the air than by chemical means. This method indeed is longer, but also the most economical.

In following this process, they begin by melting the yellow wax in water, and when melted it is left to deposite for a longer or shorter time. The water and the dregs precipitate slowly to the bottom of the vessel, afterwards the wax is wound round a cylinder, which is turned in the water. By this means it is divided into very thin flakes, of from three to four inches long. They also use for dividing the wax large shears, which are put in motion by the simple mechanism of a water-wheel.

When the wax is thus divided it is put upon vast frames, furnished with linen cloth, and left exposed to the immediate action of the air and light. These two agents combined, gradually take out the colouring substance, and with the greater facility from its being reduced into thin flakes. In this manner, at about the end of three months, the wax is rendered completely white.

When the heat of the sun is too strong, the wax will become tough, and will unite, unless care be taken to turn it two or three times a day, and to moisten it when the water is judged to be entirely evaporated. But it is always observed that when the sun has been ardent enough to melt the wax, it is no longer capable of acquiring the degree of whiteness of which it was previously susceptible. But as a great quantity of water, which will be spread over its surface, must necessarily injure it, sheds are disposed at the sides of the places where it is spread. Lastly, in order to inclose the wax with facility, grooves are made in the frames which are in the open air, and by which the platforms containing the wax are expeditiously drawn out.

When the wax has lost its yellow colour it is collected in order to be re-melted; the finest and driest parts keep at the top, the thick part precipitates in the tub, and settles between the water and the good wax. This separation occasions a waste in the wax of about one per cent.

This operation terminated, the wax is again formed into thin flakes, and exposed, as before, to the power of the sun, where it is left until it is judged to be completely bleached; it is then formed into lumps, which are once more exposed to the sun, in order to give the wax its highest lustre. When once the wax has acquired the utmost degree of whiteness of which it is susceptible, if it is left any longer exposed to the light of the air, its brilliancy far from being augmented, will, on the contrary, be considerably diminished.

In following the second method, they begin by melting the yellow wax, and when it is melted they pour into it a solution of lime in oxygenated muriatic acid. Care must be taken that the solution be neuter; that is, that it have not an excess of acid; for if the muriatic acid predominate it will render the wax lumpy. After the solution is poured in, the mixture must be strongly agitated until the wax becomes completely white. By this process the acid seizes on the colouring substance, and speedily destroys it, but less perfectly than by the simultaneous action of the light and the air.

This last process has the advantage over the first, of being more expeditious, of not requiring spacious premises, and of being practicable at all seasons; but it has also the disadvantage of being less economical, and of never producing such a brilliant white.

Memoir on the Employment of Oxygen Gas in various Cases of Suffocation. By M. Sementini.

(From the Annales de Chimie.)

The object of the work which I now